**Remarks:**

Please reconsider the application in view of the above amendments and the following remarks. First, the Applicant would like to thank the Examiner fore carefully reviewing the specification and claims. The Applicant particularly appreciates that claims 55-59 have been allowed, and that claims 8, 12-19, 27, 32-40, 47-54, 61 and 62 were found to recite patentable subject matter.

**1. Claim objections - informalities**

Claims 4, 7, 12, 15 and 54 were objected to for various informalities. The Applicant has amended the foregoing claims in a manner believed to be responsive to the objection.

Claim 58 was amended to clarify the scope of the invention and was not amended to avoid any prior art.

**2. Claim rejections - 35 U.S.C. 102(e)**

Claims 1-7, 9-11, 20-26, 28-31 and 41-46 stand rejected as anticipated by Eppink et al. (U.S. Patent No. 6,492,272). The Applicant respectfully traverses the rejection for the following reasons.

To distinguish the Applicant's claimed invention from Eppink et al., it is useful to summarize the invention, its purpose and possible benefits. The Applicant's invention relates to methods and systems usable with "steerable" drilling motors. A steerable drilling motor, or "steerable motor" is a device coupled to a drill string which converts flow of drilling mud into rotating motion of the lower portion of the steerable motor. The rotation is used to turn a drill bit coupled to the lower end of the motor. A steerable motor includes a housing having a small bend angle therein.

In directional drilling using a steerable motor, as is known in the art the steerable motor can be operated in one of two distinct modes. The first such mode is known as "rotary drilling mode", or "rotating mode." In rotating mode, the entire drill string, of which the steerable motor forms close to a lowermost component in the wellbore, is rotated from the Earth's surface by equipment on a drilling rig. The bend in the steerable motor housing, describe above, thus has

no average effect on the mechanics of drilling the wellbore, and in general, the wellbore proceeds along its existing trajectory. In the other mode, the so-called "sliding mode", rotation of the drill string from the Earth's surface is stopped. In sliding mode, the only rotation of the drill bit is the rotation imparted by the motor itself. Thus, drilling the wellbore is advanced by reason of the rotation of the drill bit imparted by the motor. However, in sliding mode the bend in the motor housing does affect the trajectory of the wellbore. The wellbore trajectory tends to move in the direction of the bend in the motor housing. Sliding mode is thus used to change the trajectory of the wellbore.

A particular drawback to directional drilling techniques known in the art is that the change from rotating mode to sliding mode is quite inefficient. The source of such inefficiency is the need to orient the bend in the motor housing to the desired direction when changing from rotary drilling to slide drilling. In orienting techniques known in the art, rotation of the drill string is stopped, and the drill string is raised such that the drill bit is lifted off the bottom of the well. Lifting the drill string is performed to cause all the torque in the drill string from the rotary mode drilling to be released. After the drill string torque is released, a measurement of the orientation of the motor housing bend is made, and the drill operator will then attempt to set the bend orientation by slowly rotating the drill string from the Earth's surface until the desired tool face angle is achieved. Then the drill string is lowered until the drill bit begins drilling the Earth formations. As the drill string begins drilling, however, reactive torque can cause the drill string from the motor housing upward to rotate in the opposite direction as the rotation of the drill bit, thus upsetting the orientation of the motor housing. The drill operator may have to lift the drill string, reset the orientation angle and lower the drill string several times before the reactive torque-adjusted motor orientation angle is along the desired angle.

The significance of the above underlined phrase will now be explained with respect to the Applicant's claimed invention. With respect to claim 1, the Applicant's invention includes a method for directional drilling in which the mode alternates between sliding mode and rotary mode without lifting the drill string ("a drill bit remains in substantially continuous contact with a bottom of said bore hole" as recited in claim 1). Applicant does not dispute that Eppink et al.

discloses a method for directional drilling using a steerable motor, which includes both slide mode and rotary mode. However, Applicant does not agree that Eppink et al. discloses any method or associated system for drilling alternately between sliding and rotating without lifting the drill bit. Eppink et al. only discloses steerably motor methods already known in the art as explained above which necessarily include lifting the drill bit off the bottom of the well to orient the steerable motor. A particular advantage of using the Applicant's claimed method is that a substantial portion of the time used in orienting the steerable motor to account for reactive torque is eliminated. Accordingly, the Applicant believes that claim 1 is patentable over Eppink et al.

Claims 2-19 ultimately depend from claim 1 and are patentable over the art of record for at least the same reasons advanced with respect to claim 1.

Claims 20 recites a drilling method for the more specific case of changing from rotating drilling mode to sliding drilling mode "with said bit in substantially continuous contact with said bottom", as recited in the claim. As explained above with respect to claim 1, Eppink et al. does not disclose such a method for directional drilling using a steerable motor.

Claims 21-40 ultimately depend from claim 20, and are patentable over the art of record for at least the same reasons advanced with respect to claim 20.

Claim 41 has been amended to include the limitations of claim 47, which the Examiner has found to recite allowable subject matter. Accordingly, claim 41 as amended is patentable over the art of record. Claims 42-46, and 48-54 ultimately depend from claim 41 and are patentable for at least the same reasons advanced with respect to claim 41 as amended.

**3. Obviousness type double patenting**

Claim 60 stands rejected as unpatentably obvious over Applicant's commonly-owned U.S. Patent No. 6,802,378. Claim 60 has been amended to include the subject matter of claim 62, which the Examiner found to be patentable. Accordingly, amended claim 60, and claim 61, which depends from claim 60, are believed to be patentable over the art of record.

The Applicant believes that this Reply is fully responsive to each and every ground of rejection and objection cited in the Office Action of April 19, 2005, and respectfully requests early favorable action on this application.

Respectfully submitted,

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